Beatty Creek Research Natural Area

Susan Carter
Roseburg District BLM, 777 NW Garden Valley Blvd., Roseburg, OR 97470

Beatty Rocks as viewed from Cow Creek Road. Photo by Susan Carter.

Tucked away on the north slope of Cow Creek Canyon approximately 10 miles southwest of Myrtle Creek in Douglas County, Beatty Creek Research Natural Area (RNA) preserves a prime example of serpentine pine savanna at the north end of the Klamath Mountains Ecoregion (Allan and others 2001). Here, under the open canopy of scraggly Jeffrey pine (*Pinus jeffreyi*), several rare plants make their home: wayside aster (*Eucephalus vialis*), Bolander's onion (*Allium bolanderi* var. *mirabile*), Douglas monkey flower (*Mimulus douglasii*), and California sandwort (*Minuartia californica*). In addition, Beatty Creek RNA is a fungus lover's paradise, as revealed by recent inventories of its rich nonvascular and fungal community: 75 lichen species, 62 bryophyte species, and 198 mushroom and truffle species (Stone 1997, Wagner 1997, Trappe 1999). [These lists are available online at http://www.npsoregon.org/lists/plantlists/beatty_creek.htm] The rare moss, *Pseudoleskeella serpentinensis*, inhabits serpentine rock outcrops.

Beatty Creek is one of ten Areas of Critical Environmental Concern (ACEC) managed by the Bureau of Land Management (BLM) Roseburg District. It was first established as an RNA in 1983 to protect representative serpentine plant communities identified in the Oregon Natural Heritage Plan (Oregon Natural Heritage Advisory Council 1998). Beatty Creek was designated an ACEC/RNA in 1995 (BLM 1995). Although the RNA originally encompassed only 173 acres, the BLM Roseburg District Resource Management Plan provided for its expansion within the Beatty Creek watershed by purchase or land exchange (BLM 1995). Twenty acres were purchased from Silver Butte Timber Company in 2002 and approximately 657 acres were added in 2003 through direct exchange with Roseburg Resources Company. The BLM currently manages approximately 850 acres as the Beatty Creek ACEC/RNA. The RNA now encompasses the entire lower portion of the Beatty Creek watershed, a small perennial stream which drains into Cow Creek, a tributary of the South Umpqua River. In addition, the 280 acres lying adjacent to the new north boundary of the RNA have been withdrawn from active forest management by the BLM due to fragile soils.

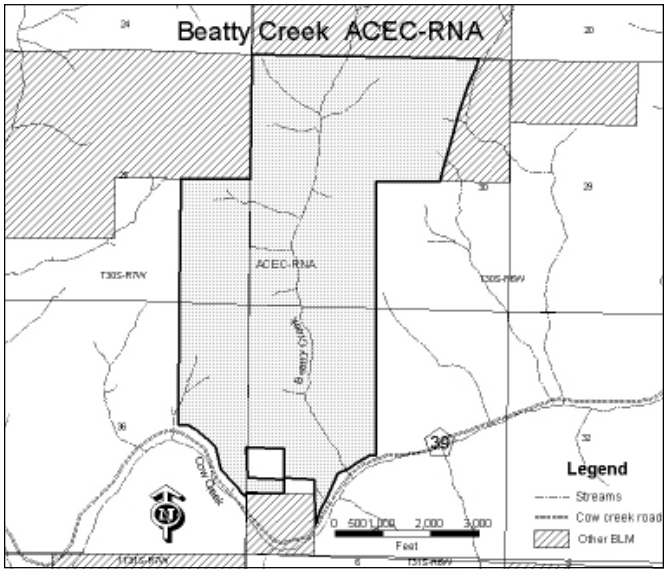
Grassland, chaparral, and forest associations are all represented, including the riparian forest along Beatty Creek. The riparian

Crinite mariposa lily (*Calochortus coxii*) is a rare serpentine endemic. Photo by Frank Callahan.

association includes Port Orford cedar (*Cupressus lawsoniana*) in the overstory and California laurel (*Umbellularia californica*) in the understory. Both of these species occur here at the eastern edge of their range in Oregon. Populations of seven special status species occur within the RNA and there is potential habitat for the serpentine endemic, crinite mariposa lily (*Calochortus coxii*), on the recently acquired addition to the RNA.

Climate

The climate is characterized by hot, dry summers and cool, wet winters. From late fall through spring, unstable low-pressure air masses carry frequent storms from the Pacific Ocean. During summer, stable high-pressure air masses bring clear skies and frequent temperature inversions. Precipitation averages about 40 inches per year, with 70% occurring from November to March. Average daily temperatures are 40°F in January and 65°F in July. Summer maximum temperatures reduce relative humidity to 40 to 45%, and occasionally to 15 to 20%. Evapo-transpiration at this time far exceeds the available soil moisture, leading to plant moisture stress, especially on south- and west-facing exposures.



Map of Beatty Creek ACEC/RNA.

Geology and Soils

Beatty Creek RNA lies within the northern portion of the Klamath Mountains Ecoregion, a region whose complex geology of folded, faulted, intruded, metamorphosed rock contains the highest concentration of serpentine bedrock in North America (Kruckeberg 1984). Serpentine rock is the metamorphosed remains of magnesium-rich igneous rock, commonly peridotite. A band of serpentine ranging from one to three miles wide crosses southern Douglas County near Cow Creek as it extends northeasterly to Little River (Ramp 1972). Most of the Beatty Creek RNA is underlain by this serpentine bedrock, except at the mouth of the creek, where marine siltstone, sandstone, and conglomerate bedrock forms exposed rock outcrops visible from the Cow Creek Road. The flora and soils of the marine conglomerate differ from the flora and soils of the serpentine intrusives in the rest of the RNA. The two main soil types derive from the two types of parent bedrock. Dubakella-Pearsoll soil associations derive from the weathering of serpentine and peridotite ultramafic bedrock. These shallow (20 to 40 inches), reddish-brown, gravelly, rocky soils are xeric, and generally occur on steep or very steep slopes. The Josephine-Speaker soil complex derives from the marine conglomerate. These soils are brown, well-drained, very gravelly loams. The Josephine-Speaker soil association supports mesic forest and oak-madrone forest (NRCS 1995).

Human Use

With the exception of a spur road which the BLM blocked off and a few old mining prospect pits, there is little evidence of past disturbance in the original RNA. However, approximately 80 acres of the new acquisition area was logged by the previous land owner. A network of skid trails is still apparent. Just north of the Central Oregon and Pacific railroad right-of-way, which was constructed in 1882, parts of a livestock fence remain, indicating that grazing may have occurred there at one time.

Although there is no direct evidence of Native American use in the RNA, early inhabitants may have burned the area to reduce brush to aid in the hunting of game animals and to ready tarweed plants for harvest (Riddle 1953).

Plant Communties/Ecology

Jeffrey pine savanna covers most of the RNA, with a small amount of late-successional Douglas fir forest, oak-madrone woodland, and rock outcrops (marine conglomerate) near the southern boundary. Jeffrey pine savanna occurs primarily on upland soils derived from serpentine parent material. In addition to Jeffrey pine, you will encounter incense cedar (*Calocedrus decurrens*), Pacific madrone

Jeffrey pine savanna. Photo by Russ Holmes.

(*Arbutus menziesii*), Douglas fir (*Pseudotsuga menziesii*), and shrub-form California laurel. The shrub component, typically buckbrush (*Ceanothus cuneatus*), poison oak (*Toxicodendron diversilobum*), and oceanspray (*Holodiscus discolor*), is widely scattered. However, buckbrush sometimes forms dense patches in the larger savanna openings. Ground cover is dominated by a wide variety of herbaceous species. Visit the RNA in the spring to enjoy a wildflower display that includes grass widows (*Olsynium douglasii* var. *douglasii)*, Henderson's shooting star (*Dodecatheon hendersonii*), common woolly sunflower (*Eriophyllum lanatum*), western buttercup (*Ranunculus occidentalis*), pennycress (*Thlaspi montanum* var. *montanum*), spring gold (*Crocidium multicaule*), Menzies's larkspur (*Delphinium menziesii*), yellowleaf iris (*Iris chrysophylla*), Henderson's triteleia (*Triteleia hendersonii* var. *hendersonii*), and showy tarweed (*Madia elegans*). In this serpentine-influenced community, exotic species are a minor component, consisting of an occasional St. John's wort (*Hypericum perforatum*), or one of the non-native annual grasses ubiquitous to southwestern Oregon: hedgehog dogtail (*Cynosurus echinatus*), or one of several annual bromes (*Bromus mollis, B. rigidus, B. sterilis*, or *B. tectorum*).

The riparian community flanks Beatty Creek as a narrow band of mixed evergreen forest (Zika 1987). Tree species include Douglas fir, incense cedar, Port Orford cedar, Oregon ash (*Fraxinus latifolia*), big leaf maple (*Acer macrophyllum*), Pacific yew (*Taxus brevifolia*), California laurel, and alder (*Alnus rubra*). Shrubs include western azalea (*Rhododendron occidentale*), ocean spray, and poison oak. Port Orford root rot (*Phytophthora lateralis*) has not been observed anywhere in the drainage.

Serpentine-influenced soils cease at the lower extremes of the watershed and the community grades into a Douglas fir forest. In addition to Douglas fir, there is Pacific madrone, Jeffrey pine, canyon live oak (*Quercus chrysolepis*), and California laurel. The lower southwest portion of the watershed supports an oak-madrone woodland, dominated by canyon live oak and pacific madrone. Poison oak, hoary manzanita (*Arctostaphylos canescens*), and bristly manzanita (*Arctostaphylos columbiana*) are the most common shrubs. Non-forested outcrops of marine conglomerates also occur in the lower watershed and are dominated by herbaceous and shrubby species. Many exotic species and noxious weeds have invaded the lower part of the drainage near the Cow Creek Road, especially on the non-serpentine soils. These include meadow knapweed (*Centaurea* x*pratensis*), yellow starthistle (*Centaurea solstitialis*), rush skeletonweed (*Chondrilla juncea*), Scots broom (*Cytisus scoparius*), and Himalayan blackberry (*Rubus armeniacus*). Yellow starthistle and rush skeletonweed infestations are small, having been introduced relatively recently. BLM is working to control these weeds before they spread.

Serpentine Endemics

Soils derived from serpentine rock have chemical and physical properties that make plant growth difficult. Low in nitrogen, phosphorus, and relatively low in calcium, these soils contain relatively high levels of magnesium and iron, as well as heavy metals such as chromium and nickel, in concentrations high enough to be toxic to some plants. Nickel and chromite have been extracted

Buckbrush (*Ceanothus cuneatus*) is the most common shrub in serpentine Jeffrey pine savannas. Photo by Russ Holmes.

The rare moss, *Pseudoleskeella serpentinensis*, surrounds spatula leaf stonecrop (*Sedum spathulifolium*) on a serpentine rock outcrop. Photo by Susan Carter.

at the Hanna Nickel Mine, approximately two and a half miles northeast of Beatty Creek RNA. Compounding the unfavorable mineral composition, these soils are highly erodible, and have low moisture availability, resulting in a harsh environment for plants. As a result, serpentine habitats have led to a specialized native flora, a high level of endemism, and a relative lack of invasion by non-native plants.

Although Jeffery pine is common on non-serpentine soils in the Sierra Nevada Mountains, in the Klamath Mountains it is largely restricted to serpentine sites (Coleman and Kruckeberg 1999). Serpentine endemics of the Beatty Creek RNA include scorpion weed (*Phacelia capitata*), lax stonecrop (*Sedum laxum* ssp. *laxum*), common eriophyllum (*Eriophyllum lanatum*), and small flowered willow herb (*Epilobium minutum)* (Coleman and Kruckeberg 1999, White 1971, as cited in Franklin and Dyrness 1988). Other species that are good indicators of serpentine, but may also occur on non-serpentine include podfern (*Aspidotis densa*), Port Orford cedar, California laurel, bigseed biscuitroot (*Lomatium macrocarpum*), buckbrush, and canyon live oak (Coleman and Kruckeberg 1999, Whittaker 1960 as cited in Franklin and Dyrness 1988).

Special Status Plant Species

Special status plant species include wayside aster, the moss *Pseudoleskeella serpentinensis*, Bolander's onion, Douglas monkey flower, and California sandwort. Wayside aster, a State Threatened and BLM Sensitive species (Oregon Natural Heritage Plan (ONHP) List 1), grows along Beatty Creek and some of its seasonal tributaries in the transition zone between the riparian forest and the upland grassland. The population is somewhat continuous throughout the drainage and forms one of the larger populations in the species' range. Most of the population (over 60%) grows in the recently acquired parcels in the watershed. Wayside aster is a tall perennial with one to several stems. The simple, dull green leaves clasp the stem, and the rayless flower heads are grouped at the end of the stems. There are no other aster species in the area.

Six populations of *Pseudoleskeella serpentinensis*, a BLM Assessment species (ONHP List 2), are known to occur on the serpentine rock outcrops. *Pseudoleskeella serpentinensis* forms reddish mats on the rocks. Its tiny leaves grow on filamentous stems.

Bolander's onion is found scattered in openings on east-facing serpentine slopes. Bolander's onion has 10-20 red-purple flowers in a head at the top of the long peduncle. The other onion known from the area, narrowleaf onion, has about 10-50 white to pink spreading flowers in the inflorescence.

Douglas monkey flower is found in serpentine openings of the shrub and Jeffrey pine associations as well as among mosses and short annuals on the conglomerate ledges at the mouth of Beatty Creek. Douglas monkey flower is a small compact annual with dark pink or maroon flowers. The upper petals look like mouse ears and the lower petals barely protrude from the lower lip. Other monkey flowers in the area are found in wetter habitats and have yellow flowers.

California sandwort grows on nearly bare soils on open slopes or ridges in the Jeffrey pine and shrub associations. California sandwort is a small plant with five-petaled flowers. It can be distinguished from the more common Douglas sandwort (*Minuartia douglasii*) by its smaller leaves. California sandwort has small, somewhat oblong leaves while Douglas sandwort has long, thread-like leaves that become curly. Bolander's onion, Douglas monkey flower, and California sandwort are BLM Tracking species (ONHP List 4).

Douglas monkeyflower (*Mimulus douglasii*). Photo by Gary Basham.

The recently acquired lands support populations of spring phacelia (*Phacelia verna*) (BLM Tracking and ONHP List 4), and

California sword fern (*Polysticum californicum*) (BLM Assessment and ONHP List 2). Both spring phacelia and California sword fern occur on the marine conglomerate outcrops. Spring phacelia is restricted to shallow moss cover over bedrock where there is very little grass and forb cover. Spring phacelia is a small annual with ovate leaves and flowers coiled in a fiddle neck. The common scorpion weed (*P. capitata*) is a perennial with long, narrow leaves and flowers densely clustered in a head. California sword fern occurs on rock bluffs with virtually no associated vegetation.

Spring phacelia (*Phacelia verna*) grows among the moss on marine conglomerate outcrops, with a sparse cover of grasses and forbs. Photo by Russ Holmes.

Serpentine areas in the acquired parcel are potential habitat for crinite mariposa lily, an endemic species restricted to serpentine sites in Douglas County (State Endangered and Bureau Sensitive species (ONHP List 1). Although not yet found at Beatty Creek, it has been identified in the Lower Cow Creek watershed, less than five miles from the acquisition parcel in areas of similar soils and plant associations.

Range Extension

The Port Orford cedar that forms a common component of the riparian habitat along Beatty Creek is noteworthy because it is free of the introduced root disease fungus *Phytophthora lateralis* (Casavan, pers. comm.). This population along the eastern edge of the species' range in Oregon occurs in relatively dry serpentine habitat, which differs significantly from typical habits closer to the center of the species' range. The Beatty Creek population may contain highly desirable genotypes resistant to the root disease.

Visiting Beatty Creek RNA

Take exit 103 from Interstate 5, and drive west on Highway 39 toward Riddle, Oregon. After following the Cow Creek Road (Highway 39) for about 8 miles, there is an unmarked pullout along the road with parking for about two vehicles. The RNA lies just north of Cow Creek Road. Visitors can either walk up Beatty Creek (beware of poison oak) or scramble around and over the rock outcrops visible from Cow Creek Road. No other public roads or trails access the area.

Acknowledgments

K. Casavan provided information on Port Orford cedar and *Phytophthora lateralis*. The vascular plant list was developed by BLM staff and P. Zika. D. Stone inventoried the lichens; D. Wagner, the bryophytes; and J. Trappe, the mushrooms and truffles. The bryophyte and fungi lists were reviewed by Dave Wagner and Dan Luoma.

References

Allan S, Buckley AR, Meacham, JE. 2001. Atlas of Oregon, 2nd ed. Eugene (OR): University of Oregon Press. 301 p.

Coleman RG, Kruckeberg AR. 1999. Geology and plant life of the Klamath-Siskiyou mountain region. Natural Areas Journal 19:320-340.

Franklin JF, Dyrness CT. 1988. Natural Vegetation of Oregon and Washington. Corvallis (OR): USDA Forest Service Gen Tech Rep PNW-8 (1973), Oregon State University Press.

Kruckeberg AR. 1984. California Serpentines: Flora, Vegetation, Geology, Soils, and Management Problems. Univ Calif Pub Bot 78. Berkeley (CA): University of California Press. 108 p.

Oregon Natural Heritage Advisory Council. 1998. Oregon Natural Heritage Plan. Salem (OR): State Land Board.

Ramp L. 1972. Geology and Mineral Resources of Douglas County, Oregon. Oregon Dep Geol Mineral Indust Bull 75:1-106.

Riddle GW. 1953. History of Early Days in Oregon, a History of the Riddle Valley. Myrtle Creek (OR): Myrtle Creek Mail.

Stone D. 1997. Inventory of Lichen Species at Beatty Creek ACEC. Unpublished list on file at BLM Roseburg District office.

Trappe JM. 1999. Beatty Creek Research Natural Area Mushroom and Truffle Survey, 1997. Unpublished report on file at BLM Roseburg District office.

[USDA NRCS] Natural Resources Conservation Service. 1995. Soil survey of Douglas County Area, Oregon. Unpublished report.

[USDI BLM] Bureau of Land Management. 1995. Roseburg District Record of Decision and Resource Management Plan. Report on file at BLM Roseburg District office.

Wagner DH. 1997. Inventory of Bryophytes of Roseburg District, Bureau of Land Management, Douglas County, Oregon. Unpublished report on file at BLM Roseburg District office.

Zika PF. 1987. The Vascular Flora of Beatty Creek Research Natural Area. Unpublished report on file at BLM Roseburg District office.

Vascular Plant Species List

Nomenclature follows the Oregon Flora Project checklist. Names of taxa native to Oregon are printed in italic *Garamond*; alien taxa are in italic *Gill Sans*, a sans-serif type.

FERNS AND THEIR ALLIES

DENNSTAEDTIACEAE (Bracken Family)

Pteridium aquilinum (L.) Kuhn (western brackenfern)

DRYOPTERIDACEAE (Wood Fern Family)

Cystopteris fragilis (L.) Bernh. (brittle bladder fern)

Dryopteris arguta (Kaulf.) Maxon (coastal shield fern)

Polystichum imbricans (D.C. Eaton) D.H. Wagner ssp. *imbricans* (narrowleaf swordfern)

Polystichum munitum (Kaulfuss) K. Presl (western swordfern)
EQUISETACEAE (Horsetail Family)
Equisetum hyemale L. (common scouring rush)
Equisetum telmateia Ehrh. (giant horsetail)
POLYPODIACEAE (Polypody Family)
Polypodium glycyrrhiza D.C. Eaton (licorice fern)
Polypodium hesperium Maxon (western polypody)
PTERIDACEAE (Brake Family)
Adiantum aleuticum (Rupr.) C.A. Paris (maidenhair fern)
Aspidotis densa (Brack.) Lellinger (podfern, Indian dream)
Pentagramma triangularis (Kaulf.) Yatsk., Windham, E. Wollenw. (gold-black fern)
SELAGINELLACEAE
Selaginella wallacei Hieron. (Wallace's selaginella)

GYMNOSPERMS

CUPRESSACEAE (Cypress Family)
Calocedrus decurrens (Torr.) Florin (incense cedar)
Chamaecyparis lawsoniana (A. Murr.) Parl. (Port Orford cedar)
PINACEAE (Pine Family)
Pinus jeffreyi Balf. (Jeffrey pine)
Pinus lambertiana Douglas (sugar pine)
Pseudotsuga menziesii (Mirb.) Franco var. *menziesii* (Douglas fir)
TAXACEAE (Yew Family)
Taxus brevifolia Nutt. (Pacific yew)

DICOTYLEDONS

ACERACEAE (Maple Family)
Acer macrophyllum Pursh (big-leaf maple)
ANACARDIACEAE (Sumac Family)
Toxicodendron diversilobum (Torr. & A. Gray) Greene (poison oak)
APIACEAE (Carrot Family)
Angelica arguta Nutt. (shining angelica)
Daucus carota L. (Queen Anne's lace)
Daucus pusillus Michx. (American wild carrot)
Lomatium macrocarpum (Nutt.) J.M. Coult. & Rose (bigseed biscuitroot)
Lomatium nudicaule (Pursh) J.M. Coult. & Rose (barestem biscuitroot)
Lomatium utriculatum (Nutt.) J.M. Coult. & Rose (Pomo celery or common lomatium)
Osmorhiza berteroi DC. (mountain sweet cicely)
Perideridia sp. (yampah)
Sanicula bipinnatifida Douglas ex Hook. (purple sanicle)
Sanicula crassicaulis Poepp. (Pacific blacksnakeroot)
Sanicula graveolens Poepp. (northern sanicle)
Torilis arvensis (Huds.) Link (spreading hedge parsley)
Yabea microcarpa (Hook. & Arn.) Koso-Pol. (false carrot)
APOCYNACEAE (Dogbane Family)
Apocynum sp. (dogbane)
ASCLEPIADACEAE (Milkweed Family)
Asclepias cordifolia (Benth.) Jeps. (purple milkweed)
ASTERACEAE (Sunflower Family)
Achillea millefolium L. (common yarrow)
Agoseris grandiflora (Nutt.) Greene (large flowered agoseris)
Agoseris heterophylla (Nutt.) Greene (annual agoseris)
Anisocarpus madioides Nutt. (woodland tarweed)
Cacaliopsis nardosmia (A. Gray) A. Gray (silvercrown)
Centaurea ×pratensis Thuill. (meadow knapweed)
Centaurea melitensis L. (tocalote, Maltese starthistle)
Centaurea solstitialis L. (yellow starthistle)
Cirsium remotifolium (Hook.) DC. (few-leaved thistle)
Cirsium vulgare (Savi) Ten. (bull thistle)
Crocidium multicaule Hook. (spring gold)
Ericameria nauseosa (Pall. ex Pursh) G.L. Nesom & G.I. Baird (rubber rabbit brush)
Eriophyllum lanatum (Pursh) J. Forbes (common eriophyllum)
Gnaphalium purpureum L. (purple cudweed)
Hieracium albiflorum Hook. (white flowered hawkweed)
Hieracium scouleri Hook. (houndstongue hawkweed)
Hypochaeris glabra L. (smooth cat's ear)
Hypocharis radicata L. (spotted or hairy cat's ear)
Lasthenia californica DC. ex Lindl. (slender gold fields)
Leucanthemum vulgare Lam. (oxeye daisy)
Madia elegans D. Don ex Lindl. (showy tarweed)
Madia exigua (Sm.) A. Gray (little tarweed)
Madia gracilis (Sm.) D.D. Keck (slender or common tarweed)
Matricaria discoidea DC. (pineapple weed)
Micropus californicus Fisch. & C.A. Mey. (slender cottonweed)
Rigiopappus leptocladus A. Gray (bristle head)
Senecio integerrimus Nutt. (western groundsel)
Senecio vulgaris L. (old man in the spring)
Sonchus asper (L.) Hill (prickly sow thistle)
Taraxacum officinale Weber ex F.H. Wigg. (common dandelion)
Tragopogon dubius Scop. (yellow salsify)
Uropappus lindleyi (DC.) Nutt. (silver puffs)
Wyethia angustifolia (DC.) Nutt. (narrow leaf wyethia)
BERBERIDACEAE
Achlys triphylla (Sm.) DC. (vanilla leaf)
Berberis aquifolium Pursh (hollyleaved barberry)
Vancouveria hexandra (Hook.) C. Morren & Decne. (white inside-out flower)
BETULACEAE (Birch Family)
Alnus rubra Bong. (red or Oregon alder)
Corylus cornuta Marshall (hazelnut)
BORAGINACEAE (Borage Family)
Cryptantha intermedia (A. Gray) Greene (common cryptantha)
Myosotis discolor Pers. (yellow and blue forget-me-not)
Plagiobothrys nothofulvus A. Gray (rusty popcorn flower)
Plagiobthrys tenellus (Nutt.) A. Gray (slender popcorn flower)
BRASSICACEAE (Mustard Family)
Arabis subpinnatifida Rollins (Klamath rockcress)
Athysanus pusillus (Hook.) Greene (sandweed)
Cardamine nuttallii Greene var. *nuttallii* (palmate toothwort)
Cardamine oligosperma Nutt. (littlewestern bittercress)
Draba verna L. (spring whitlow-grass)
Erysimum capitatum (Douglas ex Hook.) Greene (Douglas wallflower)
Lepidium nitidum Nutt. (shining peppergrass)
Thlaspi montanum L. (wild candytuft, pennycress)
Thysanocarpus curvipes Hook. (lacepod, fringepod)
CAMPANULACEAE (Bellflower Family)
Githopsis specularioides Nutt. (common blue cup)
CAPRIFOLIACEAE (Honeysuckle Family)
Lonicera hispidula (Lindl.) Douglas ex Torr. & A. Gray (hairy honeysuckle)

Symphoricarpos albus (L.) S.F. Blake var. *laevigatus* Fernald (common snowberry)
Symphoricarpos mollis Nutt. (creeping snowberry)
CARYOPHYLLACEAE (Pink Family)
Cerastium arvense L. (field chickweed)
Cerastium glomeratum Thuill. (sticky chickweed)
Minuartia californica (A. Gray) Mattf. (California sandwort)
Minuartia douglasii (Fenzl ex Torr. & A. Gray) Mattf. (Douglas sandwort)
Sagina decumbens (Elliott) Torr. & A. Gray (western pearlwort)
Silene gallica L. (windmill pink)
Silene hookeri Nutt. (Hooker's silene)
Spergularia rubra (L.) J. Presl & C. Presl (red sandspurry)
Stellaria media (L.) Vill. (chickweed)
Stellaria nitens Nutt. (shining chickweed)
CONVOLVULACEAE (Morning-glory Family)
Calystegia occidentalis (A. Gray) Brummitt ssp. *occidentalis* (chaparral false bindweed)
CRASSULACEAE (Stonecrop Family)
Crassula connata (Ruíz & Pav.) A. Berger (erect pigmy weed)
Sedum laxum (Britton) A. Berger (lax stonecrop)
Sedum spathulifolium Hook. (spatula leaf stonecrop)
Sedum stenopetalum Pursh (wormleaf stonecrop)
DISPACACEAE (Teasel Family)
Dipsacus fullonum L. (fuller's teasel)
ERICACEAE (Heath Family)
Arbutus menziesii Pursh (Pacific madrone)
Arctostaphylos canescens Eastw. (hoary manzanita)
Arctostaphylos columbiana Piper (bristly manzanita)
Rhododendron occidentale (Torr. & A. Gray) A. Gray (western azalea)
Vaccinium ovatum Pursh (evergreen huckleberry)
EUPHORBIACEAE (Spurge Family)
Euphorbia crenulata Engelm. (beetle or western wood spurge)
Euphorbia spathulata Lam. (spatulate leaved spurge)
FABACEAE (Legume Family)
Cytisus scoparius (L.) Link (Scots broom)
Lathyrus nevadensis S. Watson (Nuttall's peavine)
Lathyrus polyphyllus Nutt. (leafy peavine)
Lotus micranthus Benth. (small-flowered deervetch)
Lupinus bicolor Lindl. (miniature lupine)
Lupinus albifrons Benth. (silver lupine)
Rupertia physodes (Hook.) J.W. Grimes (forest scurf pea)
Trifolium bifidum A. Gray (notchleaf clover)
Trifolium albopurpureum Torr. & A. Gray var. *dichotomum* (Hook. & Arn.) Isely (branched Indian clover)
Trifolium dubium Sibth. (suckling or least hop clover)
Trifolium microcephalum Pursh (woolly or small headed clover)
Trifolium microdon Hook. & Arn. (thimble clover)
Trifolium variegatum Nutt. (white tip clover)
Trifolium willdenovii Spreng. (tomcat clover)
Vicia americana Muhl. ex Willd. ssp. *americana* (American vetch)
Vicia sativa L. (garden vetch)
FAGACEAE (Oak Family)
Quercus chrysolepis Liebm. (canyon live oak)
Quercus garryana Douglas ex Hook. (Oregon white oak)
Quercus kelloggii Newb. (California black oak)
GENTIANACEAE (Gentian Family)
Centaurium erythraea Rafn (European centaury)
GERANIACEAE (Geranium Family)
Erodium cicutarium (L.) L'Hér. ex Aiton (redstem filaree)
GROSSULARIACEAE (Gooseberry Family)
Ribes roezlii Regel var. *cruentum* (Greene) Rehder (shinyleaf gooseberry)
Ribes sanguineum Pursh (redflowered currant)
HYDRANGEACEAE (Hydrangea Family)
Philadelphus lewisii Pursh (mockorange)
Whipplea modesta Torr. (yerba de selva)
HYDROPHYLLACEAE (Waterleaf Family)
Nemophila menziesii Hook. & Arn. (baby blue-eyes)
Nemophila parviflora Douglas ex Benth. (small flowered nemophila)
Nemophila pedunculata Douglas ex Benth. (littlefoot nemophila)
Phacelia capitata Kruckeb. (scorpion weed)
HYPERICACEAE (St. John's Wort Family)
Hypericum perforatum L. (St. John's wort)
LAMIACEAE (Mint Family)
Monardella odoratissima Benth. (monardella)
Prunella vulgaris L. (self-heal)
Satureja douglasii (Benth.) Briq. (yerba buena)
Scutellaria antirrhinoides Benth. (snapdragon skullcap)
Stachys rigida Nutt. ex Benth. (rough hedgenettle)
LAURACEAE (Laurel Family)
Umbellularia californica (Hook. & Arn.) Nutt. (California laurel)
LINACEAE (Flax Family)
Hesperolinon micranthum (A. Gray) Small (smallflower dwarf-flax)
Linum bienne Mill. (pale or narrow leaved flax)
OLEACEAE (Ash Family)
Fraxinus latifolia Benth. (Oregon ash)
ONAGRACEAE (Evening Primrose Family)
Clarkia gracilis (Piper) A. Nelson & J.F. Macbr. (slender clarkia)
Epilobium minutum Lindl. (small flowered willow herb)
OROBANCHACEAE (Broomrape Family)
Orobanche uniflora L. (one-flowered broomrape)
PAPAVERACEAE (Poppy Family)
Eschscholzia californica Cham. (California poppy)
PLANTAGINACEAE (Plantain Family)
Plantago lanceolata L. (English plantain)
POLEMONIACEAE (Phlox Family)
Collomia grandiflora Douglas ex Lindl. (large-flowered collomia)
Collomia heterophylla Hook. (varied leaf collomia)
Gilia capitata Sims (bluefield or globe gilia)
Linanthus bicolor (Nutt.) Greene (bicolored linanthus)
Linanthus bolanderi (A. Gray) Greene (Bolander's linanthus)
Navarretia intertexta (Benth.) Hook. (needle-leaf navarettia)
Phlox gracilis (Hook.) Greene (slender phlox)
POLYGONACEAE (Buckwheat Family)
Eriogonum nudum Douglas ex Benth. (barestem buckwheat)
Polygonum sp. (knotweed)
Rumex acetosella L. (sheep sorrel)
Rumex sp. (dock)
PORTULACACEAE (Purslane Family)
Claytonia perfoliata Donn ex Willd. (miner's lettuce)
Claytonia sibirica L. (candyflower)
Montia fontana L. (water chickweed)

PRIMULACEAE (Primrose Family)
Dodecatheon hendersonii A. Gray (Henderson's shooting star)
Trientalis latifolia Hook. (broadleaf starflower)
RANUNCULACEAE (Buttercup Family)
Aquilegia formosa Fisch. ex DC (red columbine)
Delphinium menziesii DC. (Menzies' larkspur)
Ranunculus occidentalis Nutt. (western buttercup)
Ranunculus uncinatus D. Don (little buttercup)
RHAMNACEAE (Buckthorn Family)
Ceanothus cuneatus (Hook.) Nutt. ex Torr. & A. Gray (buckbrush)
Rhamnus purshiana DC. (cascara)
ROSACEAE (Rose Family)
Amelanchier alnifolia (Nutt.) Nutt. ex M. Roem. (western serviceberry)
Aphanes occidentalis (Nutt.) Rydb. (western lady's mantle)
Crataegus monogyna Jacq. (English hawthorne)
Fragaria vesca L. (wood strawberry)
Holodiscus discolor (Pursh) Maxim. (creambush oceanspray)
Oemleria cerasiformis (Torr. & A. Gray ex Hook. & Arn.) J.W. Landon (osoberry)
Rosa eglanteria L. (sweetbriar)
Rosa gymnocarpa Nutt. (baldhip rose)
Rubus armeniacus Focke (Himalayan blackberry)
Rubus leucodermis Douglas ex Torr. & A. Gray (black raspberry)
Rubus parviflorus Nutt. (thimbleberry)
Rubus spectabilis Pursh (salmonberry)
Rubus ursinus Cham. & Schltdl. (Pacific dewberry)
RUBIACEAE (Madder Family)
Galium aparine L. (stickywilly)
Galium parisiense L. (wall bedstraw)
Galium triflorum Michx. (sweetscented bedstraw)
Sherardia arvensis L. (blue field madder)
SAXIFRAGACEAE (Saxifrage Family)
Heuchera micrantha Douglas ex Lindl. (small flowered alumroot)
Lithophragma parviflorum (Hook.) Nutt. ex Torr. & A. Gray (small flowered woodland star)
Saxifraga integrifolia Hook. (swamp saxifrage)
SCROPHULARIACEAE (Figwort Family)
Castilleja attenuata (A. Gray) T.I. Chuang & Heckard (attenuate Indian paintbrush)
Castilleja pruinosa Fernald (frosted paintbrush)
Castilleja tenuis A. Gray (hairy owl clover)
Collinsia grandiflora Douglas ex Lindl. (large flowered blue eyed Mary)
Collinsia parviflora Douglas ex Lindl. (small flowered blue eyed Mary)
Collinsia rattanii A. Gray (Rattan collinsia)
Digitalis purpurea L. (foxglove)
Mimulus alsinoides Douglas ex Benth. (chickweed mimulus)
Mimulus douglasii (Benth.) A. Gray (Douglas monkey flower)
Mimulus guttatus DC. (yellow monkey flower)
Penstemon laetus A. Gray (gay penstemon)
Synthyris reniformis (Douglas ex Benth.) Benth. (snow-queen)
Tonella tenella (Benth.) A. Heller (lesser baby innocence)
Triphysaria pusilla (Benth.) T.I. Chuang & Heckard (dwarf owl clover)
Veronica arvensis L. (wall or common speedwell)
VALERIANACEAE (Valerian Family)
Plectritis congesta (Lindl.) DC. (shortspur seablush)
Valerianella locusta (L.) Laterr. (European corn salad)
VIOLACEAE (Violet Family)
Viola glabella Nutt. ex Torr. & A. Gray (stream or pioneer violet)
Viola hallii A. Gray (Oregon violet)
Viola lobata Benth. ssp. *integrifolia* (S. Watson) R.J. Little (pine violet)
VISCACEAE (Mistletoe Family)
Arceuthobium campylopodum Engelm. (western dwarf mistletoe)

MONOCOTYLEDONS
CYPERACEAE (Sedge Family)
Carex deweyana Schwein. (Dewey's sedge)
Carex mendocinensis Olney (Mendocino sedge)
Carex tumulicola Mack. (splitawn sedge)
IRIDACEAE (Iris Family)
Iris chrysophylla Howell (yellowleaf iris)
Iris tenax Douglas ex Lindl. (toughleaf iris)
Olsynium douglasii (A. Dietr.) E.P. Bicknell var. *douglasii* (grass widows)
Sisyrinchium bellum S. Watson (narrowleaf blue-eyed grass)
JUNCACEAE (Rush Family)
Juncus bufonius L. (toad rush)
Juncus effusus L. (soft or common rush)
Luzula multiflora ssp. *multiflora* (field woodrush)
LILIACEAE (Lily Family)
Allium amplectens Torr. (narrowleaf onion)
Allium bolanderi S. Watson (Bolander's onion)
Brodiaea elegans Hoover (elegant brodiaea)
Calochortus tolmiei Hook. & Arn. (Tolmie's mariposa lily)
Camassia leichtlinii (Baker) S. Watson var. *suksdorfii* (Greenm.) C.L. Hitchc. (Suksdorf's camas)
Dichelostemma capitatum (Benth.) A.W. Wood (bluedicks)
Dichelostemma congestum (Sm.) Kunth (ookow)
Erythronium oregonum Applegate (giant fawn lily)
Fritillaria affinis (Schult.) Sealy var. *affinis* (checker lily)
Lilium pardalinum Kellogg (leopard or panther lily)
Maianthemum racemosum (L.) Link ssp. *amplexicaule* (Nutt.) LaFrankie (feathery false lily of the valley)
Maianthemum stellatum (L.) Link (starry false lily of the valley)
Prosartes hookeri Torr. (drops of gold)
Prosartes smithii (Hook.) Utech, Shinwari & Kawano (largeflower fairybells)
Trillium albidum J.D. Freeman (giant trillium or wake robin)
Trillium ovatum Pursh (white trillium)
Triteleia hendersonii Greene var. *hendersonii* (Henderson's triteleia)
Triteleia hyacinthina (Lindl.) Greene (hyacinth brodiaea)
Zigadenus venenosus S. Watson (death camas)
ORCHIDACEAE (Orchid Family)
Calypso bulbosa (L.) Oakes (fairy slipper)
Goodyera oblongifolia Raf. (western rattlesnake plantain)
Piperia unalascensis (Spreng.) Rydb. (slender-spire orchid)
POACEAE (Grass Family)
Achnatherum lemmonii (Vasey) Barkworth (Lemmon's needlegrass)
Agrostis exarata Trin. (spike bentgrass)
Aira caryophyllea L. (European silver hairgrass)
Arrhenatherum elatius (L.) P. Beauv. ex J. Presl & C. Presl (tall oatgrass)
Briza minor L. (little quaking grass)
Bromus carinatus Hook. & Arn. (California brome)
Bromus hordeaceus L. ssp. *hordeaceus* (soft brome)
Bromus rigidus Roth (ripgut)

Bromus rubens L. (red brome)
Bromus sterilis L. (barren brome)
Bromus tectorum L. (cheat grass)
Bromus vulgaris (Hook.) Shear (Columbia brome)
Cynosurus echinatus L. (hedgehog dogtail)
Danthonia californica Bol. (California oatgrass)
Deschampsia danthonioides (Trin.) Munro (annual hairgrass)
Deschampsia elongata (Hook.) Munro (slender hairgrass)
Elymus glaucus Buckley (blue wildrye)
Elymus multisetus (J.G. Sm.) M.E. Jones (big squirreltail)
Festuca californica Vasey (California fescue)
Festuca idahoensis Elmer (Idaho fescue)
Festuca occidentalis Hook. (western fescue)
Festuca rubra L. (red fescue)
Festuca subuliflora Scribn. (coast range fescue)
Gastridium phleoides (Nees & Meyen) C.E. Hubb. (nitgrass)
Hordeum brachyantherum Nevski (meadow barley)
Koeleria macrantha (Ledeb.) Schult. (prairie junegrass)
Lolium multiflorum Lam. (Italian ryegrass)
Lolium perenne L. (perennial ryegrass)
Melica geyeri Munro ex Bol. (Geyer's onion grass)
Melica harfordii Bol. (Harford's melic)
Melica subulata (Griseb.) Scribn. (Alaska oniongrass)
Poa annua L. (annual bluegrass)
Poa pratensis L. ssp. *pratensis* (Kentucky bluegrass)
Poa secunda J. Presl (pine bluegrass)
Schedonorus phoenix (Scop.) Holub (tall fescue)
Taeniatherum asperum (L.) Nevski (medusahead wildrye)
Trisetum canescens Buckley (tall trisetum)
Vulpia microstachys (Nutt.) Munro ex Benth. (small fescue)

Susan Carter is the District Botanist with the BLM in Roseburg, OR. Prior to coming to the Roseburg District in 2002, she was the Botanist for the BLM Bakersfield Field Office in California.
